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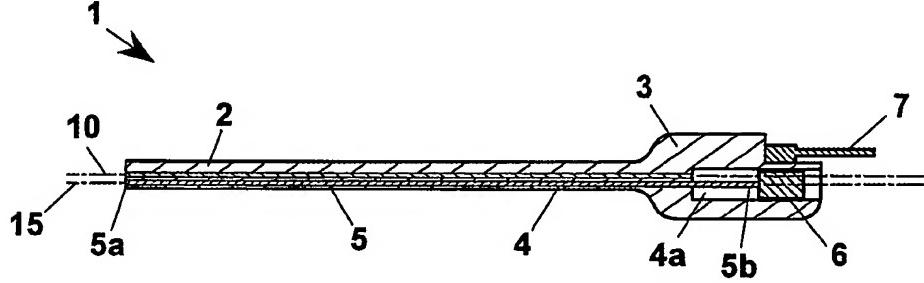
(71) Applicants and

(72) Inventors: SALSEDIO, Fabio [IT/IT]; Viale Umberto I, 100, I-04100 Latina (IT). ULLRICH, Guenther, Nino, Carlo [IT/IT]; Viale Trieste, 3, I-54100 Massa (IT). BERGAMASCO, Massimo [IT/IT]; V. Don Minzoni, 144, I-56011 Castelmaggiore - Calci (IT). VILLELLA, Paolo [IT/IT]; Via Gentileschi, 8, I-56123 Pisa (IT).

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(74) Agent: CELESTINO, Marco; Viale Giovanni Pisano, 31, I-56123 Pisa (IT).

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(57) Abstract: A goniometric sensor (1) for measuring the relative rotation of two objects (20, 25) comprising a flexible elongated element (2) whose respective ends are connected to the two objects (20, 25) and during whose bending the length variation  $\Delta L$  is determined of one of the fibres (15) not located at the neutral axis (10). This length variation  $\Delta L$  is directly proportional to the relative rotation ( $\alpha$ ) between the two bodies (20, 25) multiplied for the eccentricity (e) of the fibre (15) with respect to the neutral axis (10). Therefore, it is possible to determine easily the relative rotation ( $\alpha$ ) by knowing the length of rest L and the eccentricity (e) with respect to the neutral axis (10) and to measure the length variation  $\Delta L$  of fibre (15), for example measuring the movement of an end of a cable located in a hole that contains fibre (15).